



Higher National Unit specification

General information

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Unit code: HL8V 34

Superclass: RH

Publication date: May 2017

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

This unit is intended to allow learners to gain knowledge of plants used in the production of essential and carrier oils used in aromatherapy. It includes their taxonomy, anatomical and physiological features, growth and harvesting and methods used in the production of essential and carrier oils on a global scale. This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Outcomes

On successful completion of the Unit the learner will be able to:

- 1 Research the history of Botanical Nomenclature.
- 2 Explain plant structure and function.
- 3 Explain the production process of oils used in aromatherapy.
- 4 Evaluate and present the research.

Credit points and level

1 Higher National Unit credit at SCQF level 7: (8 SCQF credit points at SCQF level 7)

Recommended entry to the Unit

Access to this unit is at the discretion of the centre. However, learners are expected to have basic IT skills.

Higher National Unit Specification: General information (cont)

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this unit specification.

There is no automatic certification of Core Skills or Core Skill components in this unit.

Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

Higher National Unit specification: Statement of standards

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Learners should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Research the history of Botanical Nomenclature.

Knowledge and/or Skills

- ◆ The history and hierarchy of taxonomy
- ◆ Common anatomical features of plant families
- ◆ Common anatomical features of flowering plants

Outcome 2

Explain plant structure and function.

Knowledge and/or Skills

- ◆ External structure of plants
- ◆ Internal structure of plants
- ◆ Explain the physiological features of plants with regard to oil production
- ◆ Environmental pressures on plants

Outcome 3

Explain the production process of oils used in aromatherapy.

Knowledge and/or Skills

- ◆ Understand the ethical approach to plant growth, cultivation and harvesting
- ◆ Explain oil extraction methods
- ◆ Understand the influences of global economies regarding oil production

Higher National Unit specification: Statement of standards (cont)

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Outcome 4

Evaluate and present the research.

Knowledge and/or Skills

- ◆ Evaluation
- ◆ Presentation
- ◆ Referencing

Evidence Requirements for this Unit

This Unit should be assessed holistically as a project. The project should contain three main areas.

Learners will need to provide evidence to demonstrate their Knowledge and/or Skills across all Outcomes by showing that they can:

- ◆ identify the issues concerned with the identification of plants.
- ◆ identify the notable individuals and their influence relating to plant nomenclature.
- ◆ identify the classification hierarchy according to the International Code of Botanical Nomenclature.
- ◆ recognise features common to flowering and non-flowering plants.
- ◆ identify families and species of essential oil and carrier oil producing plants.
- ◆ present a project that flows logically with relevant sections.
- ◆ use terminology relevant to aromatherapy.
- ◆ be conversant with botanical nomenclature using family, species and variety names where appropriate in describing oil producing plants.
- ◆ describe the need for an ethical approach to the production of essential and carrier oils.
- ◆ use appropriate illustrations.
- ◆ reference researched information appropriately using the Harvard Referencing System.

This Unit should be assessed holistically as a project. The project should contain three main areas.

Outcome 1 will involve researching the history of botanical nomenclature and the history of taxonomy. It is vital that in this section the learner evidences the importance of identifying plants correctly. Identifying plant groupings and the evolution of the naming system.

Outcome 2 will involve the learner explaining the links to essential oil and carrier oil producing plants with their natural environment and showing how they have evolved to suit environmental influences. In their explanation, the learners should involve plant anatomical features and plant physiological processes.

Outcome 3 will involve the learner to research and explain the processes leading to the production of essential oils and carrier oils from oil producing plants.

Higher National Unit specification: Statement of standards (cont)

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

This section should include an explanation of plant growth and cultivation and oil extraction methods for the plants identified in Outcomes 1 and 2.

Outcome 4 will involve an evaluation of the research and presentation of the project.



Higher National Unit Support Notes

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Unit Support Notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit is intended to give learners knowledge of aromatic plants used in aromatherapy.

Outcome 1 looks at the importance of identifying plants correctly, the struggle to identify plant groupings and the evolution of the naming system. Although this is a short section, it is vital that learners understand it thoroughly before moving onto the specific plants of interest. Botanical classification should be introduced in a historical context, with reference to the work of significant notables including Theophrastus, Pliny, Dioscorides, Ray, Linnaeus, Bentham and Hooker. Learners should be encouraged to seek out additional publications. Plant names should be used from family to sub species, including variations and chemotypes where appropriate and their place in the entire classification system could be covered. Learners should have access to floras, standards, slides and outline information to enable comparisons and differences between familial features to be explored.

Outcome 2 is designed to help learners to link essential and carrier oil producing plants with the natural environment in which they evolved. While plant anatomical structures and physiological processes are presented in a general sense initially, examples from the range of oil producing plants should be considered in detail, with examples of as wide a range as possible depending on the time of year and samples available.

Plant structures include appropriate labels such as petals, sepals, stigma, ovary, stamen, stem or trunk, leaves, terminal and lateral buds, nodes and root types. Internal structures include the translocation system, and those cells involved in photosynthesis and gaseous exchange. Physiological processes include photosynthesis, respiration, translocation, osmosis and transpiration should be included.

Environmental pressures include altitude, slope, soil, climate, and land use, exposure to wind, rain, frost, snow, and competition from other plants, pests and diseases. These pressures vary with location. Distinction should be made between those areas where a plant is indigenous and the areas where the plant is treated as a crop. Reference should be made to changing pressures from global warming, pollution and the ethical issues concerning exploitation of wild resources.

Higher National Unit Support Notes

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Outcome 3 will examine the methods used in the production of oils used in aromatherapy. The influences of global trade and industry on oil production including methods of farming, cultivation, harvesting and oil extraction methods in countries producing essential and carrier oils should be compared. The effect/s of oil production on individual countries and global economies should be highlighted to explore how this may influence production processes. Co-operatives and single plant producers could be covered. This may include the importance of traceability and the potential for adulteration (accidental, or purposeful), as a concern for suppliers and purchasers of products used in aromatherapy and how quality control is maintained.

Outcome 4 will examine the learner's ability to evidence the evaluation of their research and present their findings using appropriate analysis, terminology and referencing methods. This Outcome will be delivered concurrently with Outcome 1–3 at appropriate stages.

Guidance on approaches to delivery of this Unit

Throughout the delivery of this Unit, examples of the most common angiosperm (flowering) and gymnosperm (non-flowering), essential oil producing plants should be available for examination by learners. Lavender, rosemary, mint and pine, for example, are easy to acquire. Their characteristics can be described using terminology learned in class. Internal plant features can be identified from prepared slides where available, or photographs and diagrams.

Visits to different habitats help learners to comprehend the way plant structures cope with environmental threats and opportunities. Seashores, woodlands and hillsides offer an interactive opportunity for the learners. Botanical gardens, maybe within reach, where more unusual plants can be seen. Learners can easily learn to handle soil samples while on visits and assess texture, structure, degree of acidity, organic content, water and air content.

There may be opportunities in some contexts to propagate and grow on plants which yield oil. Plant family groupings may be observed in different contexts in botanical gardens, and their similarities and differences shown. It must be emphasised that botanical nomenclature is essential for accuracy and communication. The background and meaning should be explained if possible.

Throughout the delivery of this unit, explanations and exemplars should refer to plants which produce volatile (essential), or fixed (carrier) oil.

Oil extraction processes such as steam distillation, CO₂ extraction, cohabitation, solvent extraction, enfleurage, expression, cold pressing, Infusion and the maceration process should be explained.

It would be useful to deliver this unit in conjunction with Aromatherapy Chemistry Aromatherapy and/or Advanced Aromatherapy, to allow an integrative approach to the specific oils covered.

Higher National Unit Support Notes (cont)

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

The assessment for this unit will require the learner to produce a researched project in three main parts to reflect the requirements of the Outcomes and include information to satisfy the Evidence Requirements. Learners should use terminology relating to aromatherapy where appropriate throughout the report. The report should be referenced using Harvard referencing style.

A notional word count of around 2,500 words may be applied to avoid under or over performance. The completed research project should include; a coversheet, contents page, an introduction, the three main parts as detailed above, a summary or conclusion, references, bibliography and appendices if appropriate. References and appendices will not be included in the word count.

The Introduction will be expected to be approximately 5% of the word count.

Part 1 approximately 20%

Part 2 approximately 40%

Part 3 approximately 30%

Summary and conclusion approximately 5%

Part 1: Research the History of Botanical Nomenclature

Learners could produce a researched project detailing and illustrating a timeline of notable individuals and their influence on taxonomy including the classification and nomenclature of the plant kingdom. While acknowledging the non-flowering sub kingdom and divisions, the project should concentrate on flowering plant species, families and sub species. Plant families will be discussed and common features illustrated. This could be expanded further in part 2. The learner should provide evidence to meet the Evidence Requirements.

Part 2:

Explain plant structures and function

This section of the project will examine the anatomical structures and physiological processes of flowering plants. The project will include information on the external and internal parts and functions of the plant. Plants selected should reflect those of most significance within the industry. A plant family study could be included detailing common features of appropriately selected plants producing essential oils and carrier oils.

Higher National Unit Support Notes (cont)

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

The learner will choose a plant family to study in greater depth. Families that produce essential oil and carrier oils would be most beneficial. A comparison study of more than one family could also be considered. A minimum of eight plants would allow scope to demonstrate a learned knowledge. The report should contain commonalities between the plants, or contrasting features if a comparison study was selected. The report should include common and botanical names along with varieties where appropriate, descriptions of physical and physiological features, country of origin and growth for oil production, harvesting, parts used, method/s of extraction. Environmental pressures and influences on plant growth and oil production should be included.

Plant chemistry, volatility note, traditional and modern use, up to date research, cautions and contraindications, interactions and appropriate illustrations may be included to integrate with Aromatherapy and/or Advanced Aromatherapy.

Part 3: Understand the production process of oils used in aromatherapy

The Evidence Requirements will be met in the final part of the project by demonstrating the knowledge of the methods used in the production of oils used in aromatherapy with regard to the influences of global trade and industry. They will include farming, cultivation, harvesting and oil extraction methods. Learners should recognise essential and carrier oils as a factor in global economies and explain how this may influence production processes.

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

Opportunities for developing Core and other essential skills

A range of complex source materials should be analysed and key points could be identified, evaluated and summarised. Written reports should express essential complex ideas and information accurately and coherently, be formally structured and use accurate language, spelling, punctuation and syntax. Use of up to date software packages and templates could support the development of writing skills. The use of skills checklists and production of drafts will ensure assessor involvement at all stages of writing and support the development of communication skills.

History of changes to Unit

Version	Description of change	Date

© Scottish Qualifications Authority [year]

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Business Development and Customer Support team, telephone 0303 333 0330.

General information for learners

Unit title: Botanical Science for Aromatherapy (SCQF level 7)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This unit offers you the opportunity to link the oils you will use in aromatherapy to the plants from which they are obtained.

You will produce a project in three parts to demonstrate the knowledge and skills gained during the delivery of this unit. You will be guided on the inclusions of your project by your course tutor. You will be required to evaluate your research and presentation of your project to ensure that you use up to date, reliable information that is referenced appropriately.

In Outcome 1 you will investigate the history of plant classification in taxonomy and plant groupings into families.

In Outcome 2 you will look at essential and carrier oil plants. You will learn about their structure and the effects of environmental pressure on these plants.

Outcome 3 you will investigate oil production, the conditions required for growth and harvesting, oil extraction methods, and the effects on production and global economies.

Outcome 4 requires you to evaluate the research, and present your findings using appropriate analysis, terminology and referencing methods.

The completed research project will be around 2,500 words and should include; a coversheet, contents page, an introduction, the three main parts as detailed above, a summary or conclusion, references, bibliography and appendices if appropriate. References and appendices will not be included in the word count.

The Introduction will be expected to be approximately 5% of the word count.

Part 1 approximately 20%

Part 2 approximately 40%

Part 3 approximately 30%

Summary and conclusion approximately 5%